



G20 OECD-BNCT WORKSHOP
Bioeconomy in the OECD countries
Presidency of council of Ministers
July 16, 2021

Panel 2:
Targets and monitoring tools: towards
a common framework to monitor
progress in the bioeconomy



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From strategy to implementation: monitoring systems and indicators

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Managing complexity and interlinks



National Bioeconomy Coordination Board



Challenges:

- ❑ future convergence and transformation of markets and industries: statistical data and indicators are currently unavailable
- ❑ gaps and poor quality/homogeneity at the most disaggregated data levels
- ❑ difficult to find data for all Bioeconomy subsectors and to distinguish between bio-based and non bio-based products and sectors.

The construction of monitoring tools is subjected to an evolutionary process of data availability to meet public awareness and assessment needs.

Key performance indicators at national and regional level

CRITERIA	INDICATORS
BIOMASS AVAILABILITY	Agricultural biomass production [kg/capita] - import of agricultural biomass Blue biomass production [kg/capita] - import of blue biomass Forestry biomass production [kg/capita] - import of forestry biomass Waste biomass production (including OFMSW) [kg/capita] - import of waste biomass
PRODUCTIVE STRUCTURE	Firms in total Bioeconomy sectors [% of total firms] Firms in Bioeconomy subsectors [% of total firms] Innovative start up in total Bioeconomy sectors [% of total innovative start up] Innovative start up in Bioeconomy subsectors [% of total innovative start up]
EMPLOYMENT STRUCTURE	Employment in total Bioeconomy sectors [% of total employment] Employment in Bioeconomy subsectors [% of total employment]
HUMAN CAPACITY	Tertiary education [% of total population] R&D employment in total Bioeconomy sectors [% of total employment] R&D employment in Bioeconomy subsectors [% of total employment] University courses in Bioeconomy sectors [% of total university courses] Research Institute in Bioeconomy sectors [% of total Research Institutes]
INNOVATION	IPRs (patent, trademark, design) applications in total Bioeconomy sectors [number of application per 1000 employees] IPRs (patent, trademark, design) applications in Bioeconomy subsectors [number of application per 1000 employees]
INVESTMENT	Private R&D expenditure [index (EU=1)] Public R&D expenditure [index (EU=1)]
DEMOGRAPHICS	Population growth [% year] Population 15-65 years [% of total population] GDP (PPP) [index (EU=1)]
MARKETS	Turnover of total Bioeconomy sectors Turnover of Bioeconomy subsectors Value added of total Bioeconomy sectors Value added of Bioeconomy subsectors Exports of total Bioeconomy sectors related goods [% of total exports] Exports of Bioeconomy subsectors related goods [% of total exports] Imports of total Bioeconomy sectors related goods [% of total exports] Imports of Bioeconomy subsectors related goods [% of total exports]

Selection of indicators:

□ correlate the overall objective to a set of EU KPIs to monitor the Bioeconomy developments on the supply and demand side

□ indicators refer to Eurostat* and national data (ISTAT, Agenzia di Coesione, ISPRA)

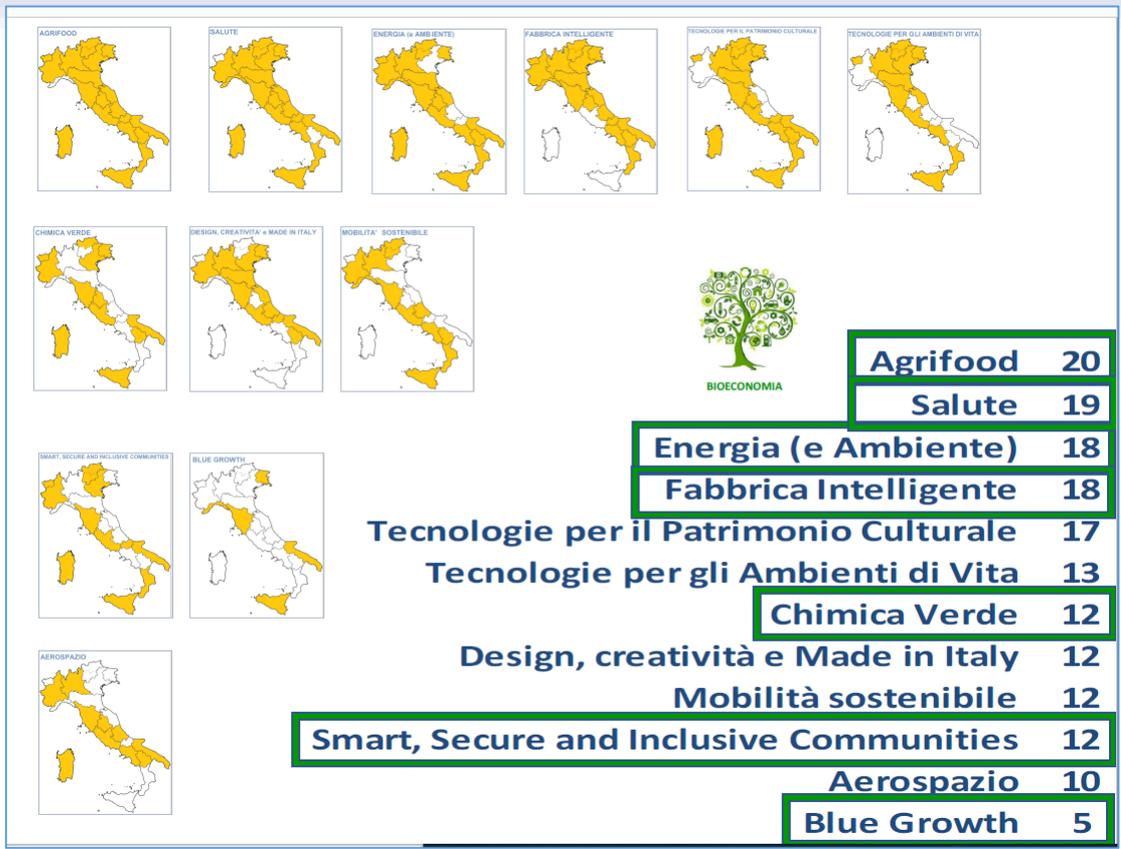
Attention to new methodological approaches under analysis at EU level

Future update of the identified indicators to be consistent with a common EU bioeconomy system, once established.

Indicators monitoring the pressure and the impact on the environmental and social systems.

OBJECTIVES	SUSTAINABLE PRINCIPLE	INDICATORS
Ensuring food security	Social	Change in food price volatility, Change in macronutrient intake/availability, Change in malnutrition or risk of hunger
Managing natural resources sustainably	Environmental/Social	Change in freshwater availability, Level of water pollution, Change in land use intensity, Land productivity, Rate of biodiversity loss, Secondary material price changes, Organic waste diverted from landfills; forest area subject to planning and certified surface; Water productivity - Water Use efficiency
Reducing dependence on non-renewable resources	Economic/Environmental	Final energy consumption, Energy intensity of the economy, Share of renewable energy in gross final energy consumption. Energy productivity - Energy use efficiency
Coping with climate change	Environmental/Social	Change in greenhouse emissions, Level of emission of air pollutants
Enhancing economic growth	Economic/Social	Change in Employment rate, Job creation in skilled/unskilled labor

Implementation of Smart Specialization Strategies: analysis of the trajectories related to bioeconomy





Cooperation at global level



What kind of cooperation is needed/you suggest between countries and actors active in this field, such as the FAO, JRC Bioeconomy Observatory, in order to reach consistent and comparable country assessment and results?

Coordinate discussion so as to converge on:

- definitions: what constitutes a desirable progress
- robust but easy-to-handle tools for monitoring, adaptable to local context
- sustainability criteria and indicators for a global Bioeconomy movement



Thank you for your kind
attention



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